

REMARKS

Claims 1-65 are pending in this application. Claims 1-4, 6-18, 21, 25, 28, 32-37, 40-45, 47, 49-53, 55, 56 and 59-62 have been rejected by the Examiner. Claims 5, 19, 20, 22-24, 26, 27, 29-31, 38, 39, 46, 48, 54, 57, 58, 63 and 64 have been objected by the Examiner. New claims 66-73 have been added.

Drawings

Although the Examiner does not comment on the drawings, the Notice of Draftsperson's Patent Drawing Review indicates that the drawings are objected to by the Draftsperson under 37 CFR 1.84. Formal drawings are submitted with this amendment. Applicant respectfully requests withdrawal of the Draftsperson's objections.

Information Disclosure Statement

The Examiner has indicated that the Information Disclosure Statement filed on June 25, 2003 having paper No. 6, fails to comply with 37 C.F.R. § 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed.

In response, Applicants submit a copy of the self-addressed return receipt postcard submitted with the June 25, 2003, Supplemental Information Disclosure Statement in accordance with MPEP § 503. This return receipt postcard indicates that one hundred thirteen (113) references were submitted with this June 25, 2003, filing. Also enclosed is a copy of the Express Mail label and Transmittal Form which accompanied the June 25, 2003, Supplemental Information Disclosure Statement. Although Attorneys for Applicants have not received the stamped return receipt postcard back from the USPTO, it is submitted that the enclosed documents establish that the 113 references were properly and timely submitted with the June 25, 2003, Supplemental Information

Disclosure Statement. Accordingly, Applicants respectfully request that the Examiner consider the submitted references.

Rejections Under 35 USC §102(b)

Claims 1-4, 8-13, 15, 21, 25, 28, 32-33, 40, 59 and 65 have been rejected under 35 U.S.C. 102(b) as being anticipated by Zeigler et al. (5,759,961). Applicants respectfully traverse the Examiner's rejection.

Independent claims 1 and 32 recite, in part:

wherein the throated structure further defines at least one channel in fluid communication with the nozzle for receiving a flow of fluid such that the trajectory of a droplet entering the entrance port is alterable by the flow of fluid to a predetermined path as the droplet passes through the exit port.

The Zeigler reference cited by the Examiner fails to disclose the claimed structure. The Zeigler reference describes a method and apparatus for producing flexible fibers of superconducting materials. This structure is described, in part, as follows:

Once the melt is well established, it flows freely at (18) from a small hole (16) at the bottom of the alumina crucible (12). . . . The melt falls through a high-temperature ceramic collar (22) in the furnace, which is used to stabilize the melt stream and prevent it from wavering. The molten stream is then subjected to a high velocity fiberizing gas stream (24) inside a blowing nozzle (26) mounted in the vertical direction. The high velocity gas generates enormous shearing rates on the surface of the molten stream which transform the Bi 2212 melt into fine ligaments. The ligaments in the molten/ glassy state undergo further shearing and cooling inside a barrel (28) of the nozzle (26). The filaments become long and thin and reach complete solidification producing fibers (30). Some of the melt produces small flakes and nearly spherical shot. The blown material is collected downstream on a porous cloth (32) in a vented collecting chamber (34). The blowing nozzle (26) is a modification of the nozzle in U.S. Pat. No. 4,828,469. The modified nozzle is here designed specifically to accommodate the thermal and fluid characteristics of the Bismuth-based superconductor melts; namely, to match the viscous behavior and cooling characteristics of these melts. Furthermore, the new

nozzle is designed to bring the high velocity shear layer in close proximity of the droplets so that fine fibers are stripped from the melted superconducting material. The objective of the modified nozzle is to obtain thin fibers with length-to-diameter ratios in the range of 1,000 to 10,000. (Col. 4, lines 12-40; emphasis added.)

Thus, the Zeigler reference does not teach that the fiberizing gas stream (24) alters the trajectory of the droplets. Instead, the Zeigler reference teaches that the fiberizing gas stream (24) “generates enormous shearing rates on the surface of the molten stream which transform the Bi 2212 melt into fine ligaments”. While the Zeigler reference does refer to preventing the melt stream from wavering, this is accomplished by the ceramic collar (22), not the fiberizing gas stream (24), as indicated by the above-quoted excerpt.

Figure 1 of the Zeigler reference appears to show that the trajectory of the fibers exiting the barrel (28) is altered by a flow of air from the collecting air or gas supply line (54). The collecting air or gas supply line (54) is also briefly mentioned on col. 5, lines 38-39. However, this teaching fails to anticipate the claimed throated structure which “defines at least one channel in fluid communication with the nozzle for receiving a flow of fluid such that the trajectory of a droplet entering the entrance port is alterable by the flow of fluid to a predetermined path as the droplet passes through the exit port.” As can be seen in Figure 1 of the Zeigler reference, the collecting air or gas supply line (54) is separate from the barrel (28) and nozzle (26).

Accordingly, for at least the reasons presented above, the Examiner’s rejection of claims 1 and 32 under § 102 is unsupported by the cited reference. Therefore, Applicants respectfully request withdrawal of the rejection of claims 1 and 32, and claims 2-31 and 33-46, which depend from claims 1 and 32, respectively.

Claim 59 recites, in part:

passing the droplet having a first trajectory into the entrance port;

altering the first trajectory of the droplet to a predetermined second trajectory via the flowing fluid; and

passing the droplet having the second trajectory through the exit port.

The Zeigler reference fails to disclose the claimed steps. The Examiner states, in part:

wherein the throated structure further defines at least one channel in fluid communication with the nozzle 26 for receiving a flow of fluid such that the trajectory of a droplet entering the entrance port 50 is alterable by the flow of fluid to a predetermined path 30 as the droplet passes through the exit port (emphasis added.)

The Zeigler reference does not teach altering the trajectory of the droplet via the flowing fluid and passing the droplet having the second trajectory through the exit port. It is only after the fibers exit the barrel (28) that the trajectory is altered by the collecting air or gas supply line (54).

Accordingly, the Examiner's rejection of claim 59 under § 102 is unsupported by the cited reference. Therefore, Applicants respectfully request withdrawal of the rejection of claim 59 and claims 60-65, which depend from claim 59.

Rejections Under 35 USC §103(a)

A. Claims 6-7, 14, 16-18, 35-36, 41-45, 61-62 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Zeigler et al. in view of Jolliffe (6,586,731).

The Jolliffe reference fails to cure the deficiencies described above with respect to the independent claims 1, 32, and 59. Accordingly, the Zeigler and Jolliffe references even in combination fail to establish a prima facie case of obviousness of claims 6-7, 14, 16-18, 35-36, 41-45, 61-62. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 6-7, 14, 16-18, 35-36, 41-45, 61-62 under § 103(a).

B. Claims 34 and 60 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Zeigler et al. in view of McDonnell et al. (3,864,692).

The McDonnell reference fails to cure the deficiencies described above with respect to the independent claims 32 and 59. Accordingly, the Zeigler and McDonnell references even in combination fail to establish a prima facie case of obviousness of claims 34 and 60. Accordingly,

Applicants respectfully request reconsideration and withdrawal of the rejections of claims 34 and 60 under § 103(a).

C. Claims 47, 49-53 and 55-56 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Zeigler et al. in view of Schultz et al. (6,633,031).

Claim 47 recites:

at least one channel defined within the device for receiving a flow of fluid therethrough, the channel being in fluid communication with and common to each nozzle such that the trajectory of a droplet entering the entrance port of any nozzle is alterable by the flow of fluid to a predetermined path as the droplet passes through the exit port. (Emphasis added.)

For at least the reasons described above, the Zeigler reference fails to disclose the claimed structure. In addition, the Schultz reference fails to cure the deficiencies the Zeigler reference with respect to claim 47. Accordingly, the Zeigler and Schultz references even in combination fail to establish a prima facie case of obviousness of claim 47. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections under § 103(a) of claim 47 and claims 49-53 and 55-56, which depend from claim 47.

D. Claim 37 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Zeigler et al. in view of Schultz et al. (6,633,031).

The Schultz reference fails to cure the deficiencies described above with respect to the independent claim 32. Accordingly, the Zeigler and Schultz references even in combination fail to establish a prima facie case of obviousness of claim 37. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of claim 37 under § 103(a).

Objections By Examiner

Claims 5, 19-20, 22-24, 26-27, 29-31, 38-39, 46, 48, 54, 57-58 and 63-64 have been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Examiner is thanked for this indication of allowability, but Applicants submit that in light of the remarks presented above, the Examiner's rejections under §§ 102-103 should be withdrawn and all pending claims 1-65 allowed, thereby making moot the objections to claims 5, 19-20, 22-24, 26-27, 29-31, 38-39, 46, 48, 54, 57-58 and 63-64.

New Claims

New claims 66-73 have been added. These claims depend from one of the independent claims 1, 32, 47, or 59, and are allowable for at least the reasons given above with respect to claims 1, 32, 47, or 59.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejections of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no.514542001000. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

By 
Hugh H. Matsubayashi
Registration No.: 43,779
MORRISON & FOERSTER LLP
755 Page Mill Road
Palo Alto, California 94304
(650) 813-5632

Attachments